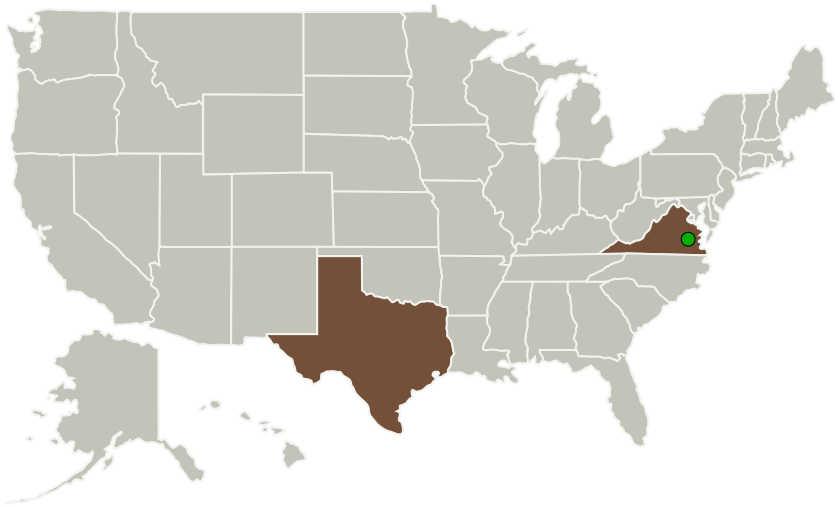
HVI Damage Assessment, Phase I

Completed Technology Project (2012 - 2012)

Project Introduction

A device is proposed that can track the electrical charge dispersion that is created when hyper velocity impact (HVI) occurs between two entities with a closing velocity greater than 1 km per second. This same device can measure the time of arrival of the charge wave front at transducers placed throughout the vehicle. Using the known speed of light minus the reactive effects of the skin of the vehicle on the "charge", the system can calculate the exact point of impact. Further, the nature of the charge dispersal wave front contains critical information as to the damage incurred as a result of the HVI.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Invocon, Inc.	Lead Organization	Industry Veteran-Owned Small Business (VOSB)	Conroe, Texas
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

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Primary U.S. Work Locations	
Texas	Virginia

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138602)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Invocon, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

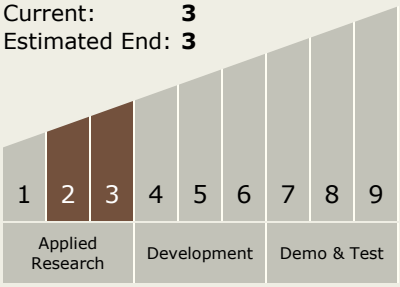
Carlos Torrez

Principal Investigator:

Doug Heermann

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.5 Structural Dynamics
    - TX12.5.3 Shock & Impact

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System